

Docket No.: 050195-0521

NOV 23 2005

PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Motohisa KAMIJO

Application No.: 10/733,369

Filed: December 12, 2003

Customer Number: 20277

Confirmation Number: 8713

Tech Center Art Unit: 3749

Examiner: GRAVINI, Stephen Michael

For: A STARTUP COMBUSTOR FOR A FUEL CELL

**NOTICE OF APPEAL**  
**FROM THE PRIMARY EXAMINER**  
**TO THE BOARD OF APPEALS**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicant hereby appeals to the Board of Appeals from the decision dated May 25, 2005 of the Primary Examiner finally rejecting claims 1-15.

Appeal Fee: \$ 500.00

- ☐ Not required (fee paid in prior appeal in this application).  
☒ Charge to Deposit Account No. 500417.  
☐ Check Enclosed.

11/25/2005 NNGUYEN1 00000112 500417 10733369  
1 FC:1401 500.00 DA

Adjustment date: 03/13/2006 EEKUBAY1  
11/25/2005 NNGUYEN1 00000112 500417 10733369  
01 FC:1401 500.00 CR

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
Phone: 202.756.8000 BPC:kap  
Facsimile: 202.756.8087  
Date: November 23, 2005

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

*Bernard P. Codd*

Bernard P. Codd  
Registration No. 46,429

Please recognize our Customer No. 20277  
as our correspondence address.

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Docket No.: 050195-0521

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of : Customer Number: 20277  
Motohisa KAMIJO : Confirmation Number: 8713  
Application No.: 10/733,369 : Group Art Unit: 3749  
Filed: December 12, 2003 : Examiner: GRAVINI, Stephen Michael  
For: A STARTUP COMBUSTOR FOR A FUEL CELL

**PETITION FOR EXTENSION OF TIME**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

It is respectfully requested that the time for response to the Office Action dated May 25, 2005, now due to expire August 25, 2005, be extended for three month(s) and set to expire on November 25, 2005.

Please charge the extension fee of \$1020.00 to Deposit Account No. 500417. Please charge any additional fees or credit any overpayment to Deposit Account No. 500417.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

*Bernard P. Codd*

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Registration No. 46,429

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Date: November 23, 2005

Adjustment date: 03/13/2006 EEKUBAY1  
11/25/2005 NNGUYEN1 00000112 500417 10733369  
02 FC:1253 1020.00 CR

11/25/2005 NNGUYEN1 00000112 500417 10733369  
02 FC:1253 1020.00 DA

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Packet No.: 050195-0521

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of

Motohisa KAMIJO

Application No.: 10/733,369

Filed: December 12, 2003

For: A STARTUP COMBUSTOR FOR A FUEL CELL

Customer Number: 20277

Confirmation Number: 8713

Group Art Unit: 3749

Examiner: GRAVINI, Stephen Michael

**REQUEST FOR REFUND**

Mail Stop Refund  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

A refund in the amount of \$1,520.00 is hereby requested in the above-identified application for the following reason:

- \$500 Notice of Appeal (control number 170)
- \$1,020 Petition for Extension of Time (control number 171)

The original Office Action was mailed May 25, 2005, but never received by our firm.

Upon checking status of the application, we downloaded the Office Action from PAIR on August 26, 2005. On September 8, 2005, we filed a Petition to reset the period for reply under MPEP 710.06. A Decision on Petition was granted by the USPTO on November 30, 2005. The above documents were filed in the USPTO on November 23, 2005, to avoid abandonment.

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JAN 30 2006

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Application No.: 10/733,369

Hence our Petition was granted, please immediately credit Deposit Account number 500417 in this amount.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



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600 13<sup>th</sup> Street, N.W.  
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Phone: 202.756.8000 BPC:kap  
Facsimile: 202.756.8087  
Date: January 23, 2006

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Serial No.: 050195-0521

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Motohisa KAMIJO

Application No.: 10/733,369

Filed: December 12, 2003

Group Art Unit: 3749

**RESPONSE UNDER 37 C.F.R. 1.116  
EXPEDITED PROCEDURE**

Customer No.: 20277  
Confirmation No.: 8713

Examiner: GRAVINI, Stephen  
Michael

Title: A STARTUP COMBUSTOR FOR A FUEL CELL

**AMENDMENT UNDER 37 C.F.R. § 1.116**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

These amendments and remarks are filed in response to the final Office Action dated August 26, 2005, pursuant to 37 C.F.R. § 1.116.

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** begin on page 3 of this paper.

**Remarks** begin on page 6 of this paper.

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**Amendments to the Specification:**

Please amend paragraph [39] beginning on page 8 of the specification as follows:

[39] In another embodiment of the present invention, Fig. 3 illustrates the structure of a combustor with an air cooler 350. As shown in this figure, fuel source 310, air source 320 and glow plug 330 are upstream to filter 340. Controller 380 regulates the air-fuel mixture and the ignition of the apparatus. During operation, filter 340 collects any non-gaseous components introduced by the fuel or air supply, or that may develop during the combustion of the fuel and prevents the soot from affecting downstream components, such as reformer 370.

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**Amendments to the Claims:**

This listing of the claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1-2 (Canceled)

3 (Currently Amended): A startup combustor ~~according to claim 2~~ that is used at startup to warm a fuel reformer characterized by:

a chamber for combusting fuel;

a fuel port connected to the chamber for introducing fuel;

an air port connected to the chamber for introducing air;

an ignition source connected to the chamber for igniting fuel and air introduced thereto;

a filter within the chamber, which is capable of preventing a substantial portion of any soot contained in the air or fuel or which can develop from combusting the fuel with the ignition source from passing through the filter;

a controller for regulating the introduction of air and fuel to the chamber and capable of maintaining an excess air ratio to regenerate the filter; and

a means for detecting soot accumulation onto the filter, wherein the means for detecting the soot accumulation onto the filter comprises a differential pressure gauge.

4-6 (Canceled)

7 (Currently Amended): A startup combustor ~~according to claim 6 further characterized by~~ that is used at startup to warm a fuel reformer characterized by:

a chamber for combusting fuel;

a fuel port connected to the chamber for introducing fuel;

an air port connected to the chamber for introducing air;

an ignition source connected to the chamber for igniting fuel and air introduced thereto;

a filter within the chamber, which is capable of preventing a substantial portion of any soot contained in the air or fuel or which can develop from combusting the fuel with the ignition source from passing through the filter;

a controller for regulating the introduction of air and fuel to the chamber and capable of maintaining an excess air ratio to regenerate the filter,

the startup combustor characterized by being able to predict the filter outlet temperature from the amount of soot accumulated on the filter and performing an operation that lowers the outlet temperature of the combusted gases exiting the filter; and

an inlet port downstream of the filter and before a reformer, which is capable of introducing water to the combusted gases to cool the an inlet temperature of the reformer.

8-13 (Canceled)

14 (Currently Amended): The A process of ~~claim 13~~ for operating a startup combustor to regenerate a filter, the process comprising:

combining air and a hydrocarbon fuel to form an air hydrocarbon fuel mixture;

combusting the mixture to form a combustion gas that can also contain soot;

passing the combusted gas through a filter to collect any soot onto the filter;

when a predetermined amount of soot has collected on the filter, regenerating the filter by introducing an excess air ratio of about 1.5 to about 2.8 for a set period of time to oxidize the collected soot on the filter;

determining a filter outlet temperature based on a level of the soot accumulated on the filter; and



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performing an operation that lowers an outlet temperature of the combusted gases exiting the filter, wherein the operation that lowers the outlet temperature of the combusted gases exiting the filter is achieved by introducing water to the combusted gases.

15 (Canceled)

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**REMARKS**

This amendment is filed in response to the final Office Action dated August 26, 2005.<sup>1</sup> In view of these amendment and remarks, this amendment should be entered, the application allowed, and the case passed to issue.

No new matter or considerations are introduced by this amendment. Claims 3, 7, and 14 are amended in accordance with the Examiner's recommendation to place them in condition for allowance. The amendment to claim 3 is supported by claims 1 and 2. Amended claim 7 is supported by claims 1 and 6. Support for amended claim 14 is found in claims 9 and 13. The specification is amended to correct an informality. Support for the amendment to the specification is found in Figure 3.

Claims 3, 7, and 14 are pending in this application. Claims 1, 2, 5, 6, 8-10, 13, and 15 are rejected. Claims 3, 4, 7, 11, 12, and 14 were objected to. Claims 3, 7, and 14 are amended in this response. Claims 1, 2, 4-6, 8-13, and 15 were canceled in this response.

***Interview Summary***

The undersigned telephoned Examiner Gravini on January 20, 2006, and left a voicemail inquiring whether an amendment that clearly placed the application in condition for allowance, such as by rewriting the objected to claims in independent form, would be entered. Because of delay by the USPTO in granting Applicant's petition of September 8, 2005, Applicant had to file a three-month extension of time and Notice of Appeal to keep the application pending while the petition was being considered. The USPTO ultimately granted Applicant's petition to reset the period for reply, thus Applicant believes this response should be treated as an after final response. Examiner Gravini returned Applicant's call explaining that an amendment rewriting

<sup>1</sup> The original final Office Action was mailed May 25, 2005, however, Applicant never received the May 25, 2005 Office Action. Applicant filed a petition September 8, 2005 requesting the period for reply be reset. On November 30, 2005, the USPTO granted the petition and reset the mailing date of the final Office Action to August 26, 2005.

the objected to claims in independent form to place the application in condition for allowance would be entered. Applicant sincerely appreciates Examiner Gravini's prompt response.

*Allowable Subject Matter*

The Examiner objected to claims 3, 4, 7, 11, 12, and 14 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

Applicant gratefully acknowledges the indication of allowable subject matter. In accordance with the Examiner's recommendation, claims 3, 7, and 14 have been rewritten in independent form including the limitations of the intervening claims. The remaining claims have been canceled. Thus, Applicant submits this application is clearly in condition for allowance.

*Claim Rejections Under 35 U.S.C. § 103*

Claims 1, 2, 5, 6, 8-10, 13, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda et al. (U.S. Patent Application Publication 2001/0031387) in view of Numata et al. (JP 2002-012406). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Claims 1, 2, 5, 6, 8-10, 13, and 15 have been canceled, thus, this rejection is moot.

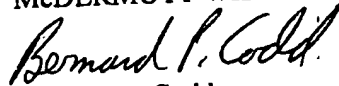
In view of the above remarks, Applicant submits that this amendment should be entered, the application allowed, and the case passed to issue. If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

10/733,369

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



Bernard P. Codd

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Date: January 23, 2006

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In re Application of

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Response Under 37 CFR 1.116 - Expedited Procedure  
Customer Number: 20277

Motohisa KAMIJO

Confirmation Number: 8713

Application No.: 10/733,369

Group Art Unit: 3749

Filed: December 12, 2003

Examiner: GRAVINI, Stephen Michael

For: A STARTUP COMBUSTOR FOR A FUEL CELL

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is an Amendment in the above-identified application.  
☐ No additional fee is required.

☒ Applicant is entitled to small entity status under 37 CFR 1.27  
Also attached: Petition for Extension of Time (2 months); Request for Refund

The fee has been calculated as shown below:

	NO. OF CLAIMS	HIGHEST PREVIOUSLY PAID FOR	EXTRA CLAIMS	RATE	FEE
Total Claims	3	20	0	\$50.00 =	\$0.00
Independent Claims	3	3	0	\$200.00 =	\$0.00
Multiple dependent claims newly presented					\$0.00
Fee for extension of time					\$450.00
					\$0.00
Total of Above Calculations					\$450.00

☒ Please charge my Deposit Account No. 500417 in the amount of \$450.00. An additional copy of this transmittal sheet is submitted herewith.

☒ The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment, to Deposit Account No. 500417, including any filing fees under 37 CFR 1.16 for presentation of extra claims and any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

*Bernard P. Codd*

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Date: January 23, 2006

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